Assessing the Impact of High Touch Specialty Pharmacy Services in Patients Receiving Teriparatide

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BACKGROUNDS

- Teriparatide stimulates bone growth in patients suffering from osteoporosis and may benefit those who have failed other options.1
- A significant amount of patients do not complete the recommended two years of treatment with teriparatide.2
- In 2013, the Vanderbilt Specialty Pharmacy (VSP) integrated a full-time clinical pharmacist into the Vanderbilt University Medical Center (VUMC) Endocrinology clinic to assist with continuity of care.

OBJECTIVES

- PRIMARY OBJECTIVE: Assess teriparatide completion rates between patients who receive medications through VSP using the high-touch model compared to those who do not.
- SECONDARY OBJECTIVES: Evaluate and describe the number and types of patient contacts by the integrated specialty pharmacist as well as assess the impact of financial assistance on completion of treatment.

METHODS

- This is a single-center, retrospective, cohort study of patients. The two years following initial prescriber of teriparatide were reviewed.
- VSP: Initial prescription between June 2014 and July 2015.
- Inclusion criteria: prescribed teriparatide for the first time by a provider at the VUMC Endocrinology Clinic
- Exclusion criteria: previously received a prescription for teriparatide prior to this time period, but did not complete treatment.
- Primary endpoint: teriparatide treatment completion
- Secondary endpoints: months the teriparatide completed, baseline characteristics related to treatment completion, financial assistance provided (VSP only), number and type of pharmacist contact (VSP only).

RESULTS

- Baseline Characteristics (% N=190)
  - Age (mean ESD): Female 58 ± 13
  - Ethnicity: White 141 (74%)
  - Non-smoker: Yes 96 (50%)
  - On Calcium Supplementation: No 58 (31%)
  - On Vitamin D Supplementation: No 58 (31%)
  - Fracture at Baseline: No 122 (64%)

- Primary Outcome of Teriparatide Treatment Completion for All Patients
  - OR: 95% C.I. P-value
  - Gender
    - Male vs. female 0.69 0.34 - 1.41 0.311
    - Non-smoker vs. smoker 3.20 1.33 - 7.70 0.009
  - Calcium supplementation (yes vs. no)
    - Vitamin D supplementation 1.38 0.74 - 2.56 0.310
    - Calcium supplementation (yes vs. no) 1.72 0.92 - 3.19 0.103
  - VSP vs. non-VSP
    - Calcium supplementation 1.62 0.86 - 3.03 0.133

- Baseline Factors
  - Age (per 1 year)
    - Male: 1.03 1.00 - 1.06 0.22
    - Female: 1.05 1.01 - 1.09 0.02

OUTCOMES RELATED TO TERIPARATIDE PHARMACY PATIENTS

- Pharmacists Contacts (N = 58)
  - Average contact: 3.2 (2.3)
  - Contact Type: Explanation of type of contact (%)
    - Side effects: 24 (41%)
    - Adherence: 5 (9%)
    - Care Coordination: 3 (5%)
    - Medication use: 20 (34%)
    - Improve access: 7 (12%)
- Contacts are reported per unique patient over the entire course of teriparatide treatment

CONCLUSION

- The majority of VSP patients used some form of financial assistance (74%).
- Over the course of two years, patients were contacted by the pharmacist an average of 3 times more than non-VSP patients.
- The majority of VSP patients were more likely to drop out of treatment after completing 12 months of teriparatide compared to non-VSP patients.

REFERENCES


DISCUSSION

Primary Outcome: Patients utilizing VSP services were 62% more likely to complete teriparatide treatment and 49% less likely to drop out of treatment after completing 12 months of teriparatide compared to non-VSP patients.

- A univariate logistic regression revealed that patients were more likely to complete treatment if they were non-smokers compared to smokers. Older age was also found to be significant in treatment completion rates with every 10 years increasing completion rate by 30%.
- After adjusting for pharmacy utilized, age, gender, fracture at baseline, and calcium supplementation, smokers were still three times more likely to complete treatment (OR of 2.83 with 95% Confidence Interval of 1.13-7.07 and P-value of 0.026).

SECONDARY OUTCOMES:

- The majority of VSP patients (64%) required the use of the Vanderbilt Medication Assistance Program (MAP) to complete teriparatide treatment. MAP is only available to VSP patients.
- The majority of VSP patients used some form of financial assistance (74%).
- Over the course of two years, patients were contacted by the pharmacist an average of 3 times more than non-VSP patients, with the majority of contacts related to improving access to treatment.

CONCLUSION

- VSP services improve teriparatide completion rates.
- Smoking status is an important predictor of teriparatide completion and should be addressed by physicians and pharmacists caring for this patient population.
- Pharmacists are integral in increasing access to treatment for specialty patients. As most patients receiving teriparatide require some form of financial assistance, ongoing evaluation of the impact of treatment cost and adherence in integrated specialty models could be useful.

REFERENCES